MODULAR Total hip arthroplasty

groupe lépine

MBA stem - a serene implant experience

Joint biomechanics must be preserved during total hip arthroplasty. The need to adapt to specific anatomical situations requires the prosthesis to be perfectly positioned. MBA anatomical stems (left and right) adapt to the shape of the patient's femur and suit all morphologies.

FEATURES

Modular
Freedom of choice during the surgical procedure for a better rehabilitation of extra-medullary characteristics.

Biconical
- Meets modularity requirements.
- Makes acetabular revisions easier.

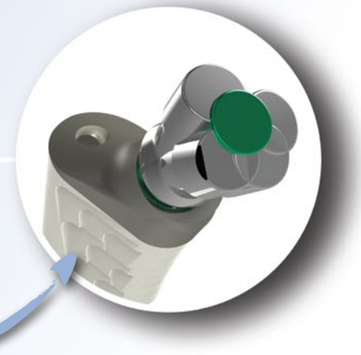
The self-aligning nature of the MBA oblique modular neck effectively compensates a poor positioning and the risk of dislocation.

Anatomical
- With 8 sizes available, the proximal part of the MBA stem provides optimal filling of the femur metaphysis.
- The curve of the implant adapts to the shape of the femur and increases the contact area.
- Optimal bone/stem contact ensures excellent stability and fast bone integration.
- The cemented version can overcome a lack of primary stability.

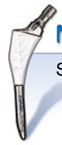
ADVANTAGES

Range of 12/14 modular necks
- Straight (femoral neck angle of 135°) and angled to use with different phenotypes.
- Standard modular neck (straight) restoring the natural orientation of the femur.
- Angled neck option: varus, anteversion, retroversion to correct unsatisfactory inclination or femoral version.

Dedicated instrumentation
- Simple and ergonomic, it enables surgeons to test the stability, length and femoral neck version at every step of the surgical procedure.



Bilayer coating of vacuum-plasma sprayed pure titanium and hydroxyapatite



MBA stem – Monobloc implant
Size 1 right and Size 1 left*

MBA stem – HAP Right
Sizes 2 to 7*

MBA stem – HAP Left
Sizes 2 to 7*

MBA stem – Cemented Right
Sizes 2 to 5*

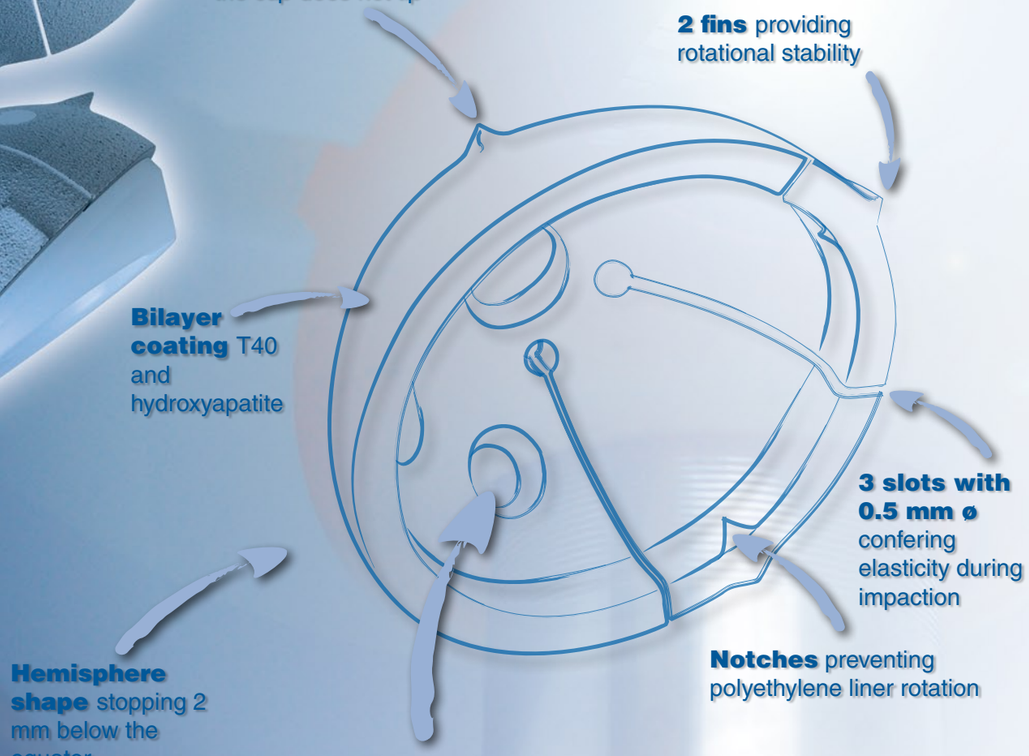
MBA stem – Cemented Left
Sizes 2 to 5*

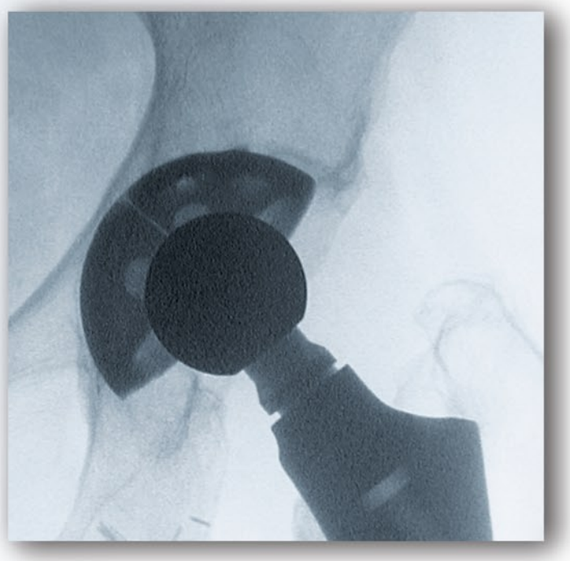
MBA modular neck
1 straight and 1 angled*

*Please refer to our product reference sheet

MBA acetabular cup - Elasticity improving Press-fit stabilization

Based on a concept backed by 20 years of clinical follow-up, the MBA cup immediately provides primary stability, while maintaining the elasticity in the acetabulum. Three slots confer this elasticity ensuring optimal primary stability and close contact with the acetabular cavity, which results in good secondary bone integration.





Used since 1997, the MBA cup has proved to be effective in both primary and revision cases.

MBA cup – HAP
Sizes 44 to 62*

U PE constrained insert
Sizes 44 to 62, Ø 22.2 and 28 mm*

U PE cover insert
Sizes 48 to 62, Ø 22.2 and 28 mm*

Cancellous screw Ø 5.5 mm
Sizes 20 to 55*

*Please refer to our product reference sheet

FEATURES

- Optimal acetabular shell thickness
- 3 slots confering elasticity to the cup
- Macrostructure increasing primary stability
- Availible cover and contrained revision inserts providing more options to adapt to the patient's pathology.

ADVANTAGES

- Preserving the natural elasticity of the acetabulum
- Optimal primary stability, ensuring good secondary bone integration

INTEGRA stem - More than just an implant

The INTEGRA revision and reconstruction range offers the most complete solution to meet the needs of patients with significant bone loss requiring special treatment.

Thin, highly polished neck

Stabilising screw

12/14 Taper

Openings used to reattach fractured tuberosity and femoral fragment

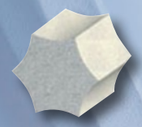
Horizontal support on the diaphysis

Modular with notched morse taper that enables anteversion to be set by 15° increments

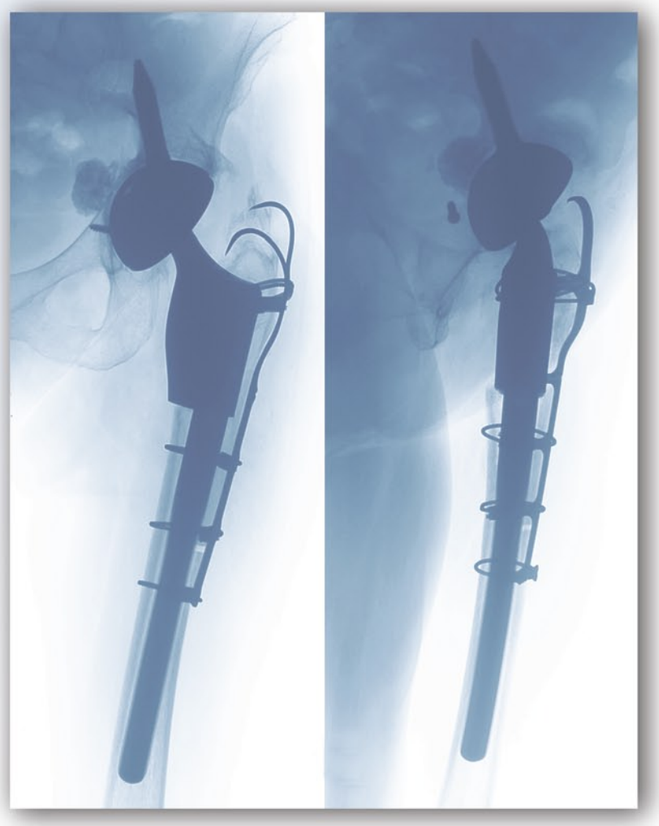
Divisible epiphyseal plate used for internal fixation of the femoral fragment

Physiological curvature of femur and constant diameter ensuring close contact with bone

Anatomical shaft perfectly matching with the femur



Star-shaped cross-section ensuring optimal stability



ADVANTAGES

- The INTEGRA revision and reconstruction stem is an innovative product that was designed to meet surgeon needs.
- The extensive product range covers the range of bone loss and fragmentation situations.
- Curved stem with star-shaped cross-section provides optimal stability
- The modularity of the proximal block counters dislocation by controlling anteversion.

INTEGRA meta block HAP

Standard heights of 30, 40 and 60 mm
Heights of 80, 100 and 120 mm available on special request*

INTEGRA stem HAP, lock and no lock

Sizes 11 to 17, length 140 to 240 mm, locking option available*

INTEGRA cemented stem

Sizes 11 and 13, length 160 and 200 mm*

Wedge Ø 5.5 mm

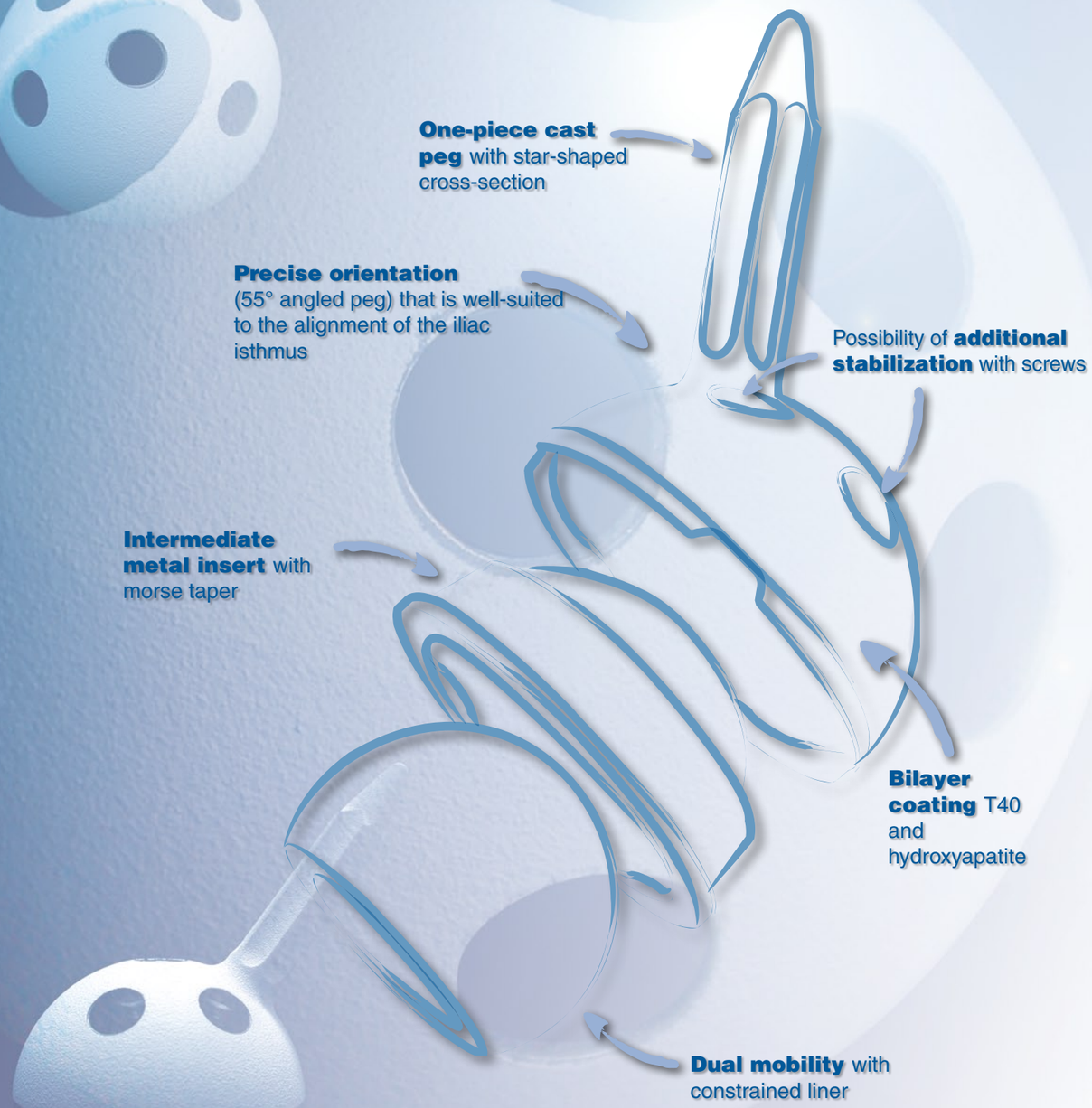
Length 28 to 40 mm*

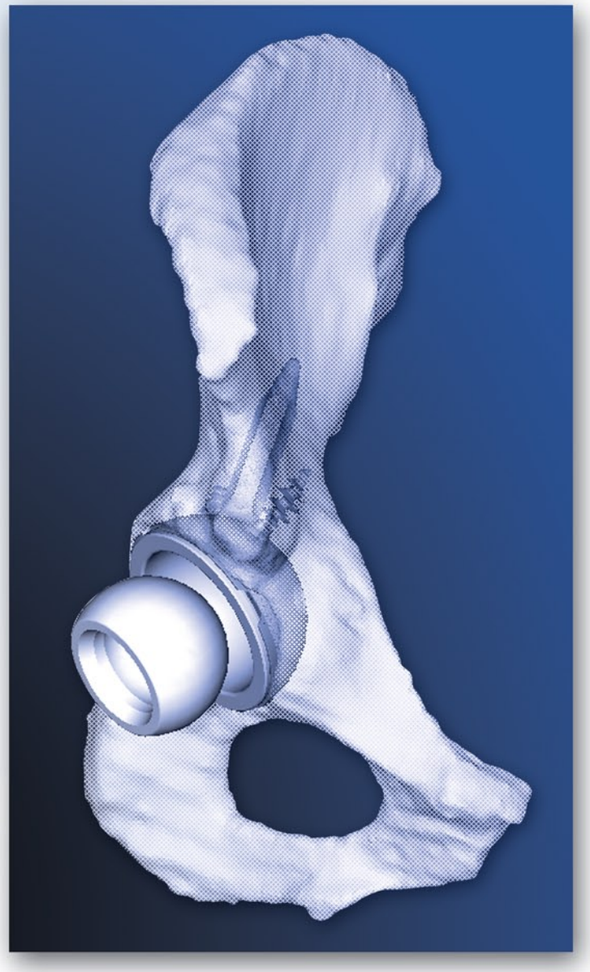
INTEGRA epiphyseal plate

*Please refer to our product reference sheet

INTEGRA cup - Optimal bone fixation for cases of severe bone loss

No matter how much bone is lost from the acetabulum, the iliac isthmus (iliopubic beam) provides a solid, reliable anatomical structure that can accept a fixation peg. The iliac isthmus provides solid anchoring for the INTEGRA dual mobility cup without the need for a peripheral flange.





Stability ensured even without peripheral fixation

INTEGRA revision cup HAP
Sizes 50 to 62*

INTEGRA cup – HAP
Sizes 50 to 62*

INTEGRA insert
Sizes 50 to 62*

Dual mobility liner
For cup sizes 50 to 62*

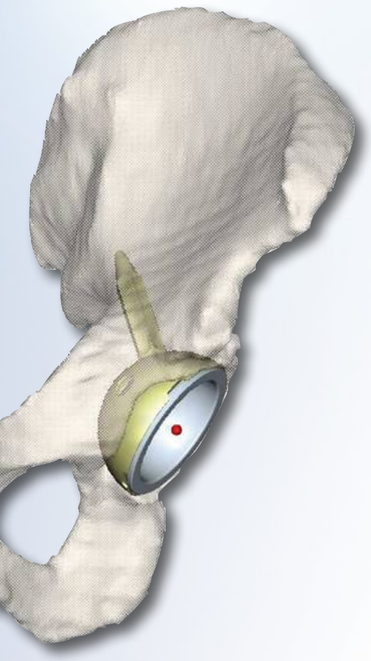
Fixation screw
Length 20 to 60 mm*

*Please refer to our product reference sheet

Modularity: a well-planned choice

For both primary and revision cases, modularity allows the surgeon to restore normal hip anatomy and joint muscle balance. The goal is to improve functional results, and also to reduce excessive loading of the implant.

However, modularity can have a negative impact on mechanical strength. Stress concentrations, surface roughness, coating effects, metal compatibility and corrosion resistance are parameters to validate at every design and manufacturing step to prevent incidents that could compromise the expected results.

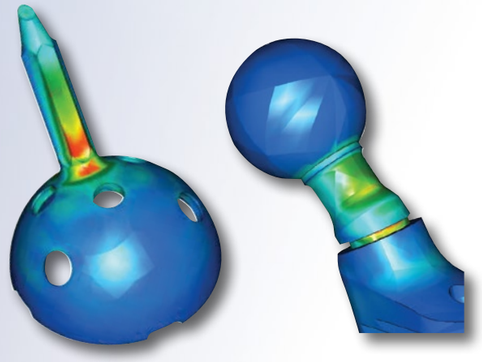


Designed to meet biomechanical requirements

The angle and cross-sectional shape are analyzed to achieve the best possible risk-benefit ratio between the biomechanics and mechanical strength.

Finite element analysis of the most critical implant assembly configuration

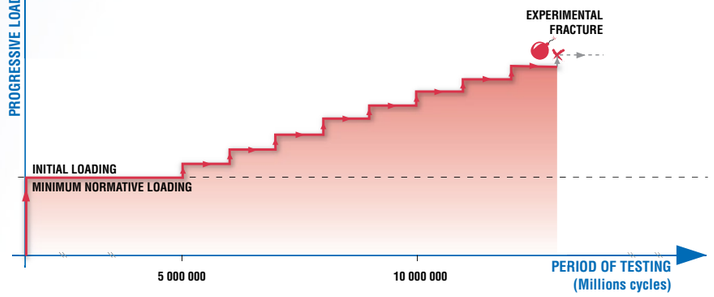
The areas subjected to traction loading are modeled for all the modular parts. Stress concentrations are identified and quantified, while taking into account the junctions, shapes and materials.



Determination of theoretical endurance limit of implants (the most constraint configuration)

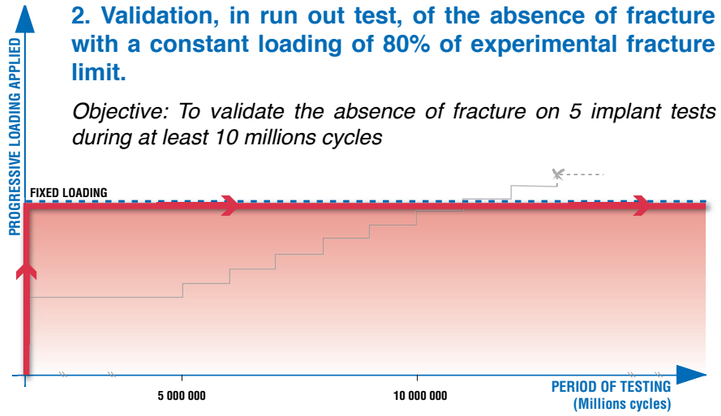
1. Locati method testing

Objective: To increase progressively the loading until the experimental fracture of the implant



2. Validation, in run out test, of the absence of fracture with a constant loading of 80% of experimental fracture limit.

Objective: To validate the absence of fracture on 5 implant tests during at least 10 millions cycles



Titanium alloy

The cementless MBA stems, INTEGRA proximal blocks and INTEGRA distal stems, MBA cups and INTEGRA cups are made of a forged titanium, aluminum and vanadium alloy in compliance with ISO 5834-3.

Stainless steel

The MBA cemented stems and metal femoral heads are machined from high nitrogen stainless steel in compliance with ISO 5832-3.

Polyethylene

The inserts and dual mobility liners are machined from bars of ultra-high-molecular-weight polyethylene, in compliance with ISO 5834-2.

Ceramic

The femoral heads are made of highly pure alumina ceramic, in compliance with ISO 6474.

Cobalt chromium alloy

The MBA modular neck are made of wrought cobalt–chromium–molybdenum alloy, in compliance with ISO 5832-12.

Coating

Hydroxyapatite chemical characteristics are determined and validated for each spraying campaign according to ISO 13779-3.
Traction adhesion is set in compliance with ISO 13779-4.

In theory, modularity is the most effective technical approach to meet all the requirements of orthopedic surgeons who want to ensure that joints are stable, leg length is equal and muscle tension is restored.

GROUPE LEPINE is committed to make all these needs co-exist with optimal and safe use of these implants, based on its manufacturing know-how (1-3), which takes into account a unique mechanical environment, as well as a published clinical follow-up (4-9).

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groupe lépine

175 rue Jacquard - ZI Lyon Nord
69730 Genay - FRANCE
TEL. +33 (0)4 72 33 02 95
FAX +33 (0)4 72 35 96 50
www.groupe-lepine.com

lépine ALGERIE
9 rue philosophe Tabrizi
Les sources
Bir Mourad Rais - ALGER
lepine-algerie@groupe-lepine.com

lépine IBÉRICA
C/J.J. Tadeo Murguia
N. 3 - 5 BAJO
20304 IRÚN (GUIPÚZCOA)
lepine-iberica@groupe-lepine.com

lépine ÍTALIA
Via Cassanesse, 100
Segrate (Milano)
lepine-italia@groupe-lepine.com

lépine MAROC
79 avenue IBN SINA
10080 RABAT - AGDAL
lepine-maroc@groupe-lepine.com

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Range of INTEGRA femoral stems

INTEGRA HAP stem no lock

Size	Length (mm)	Ref.
11	140	HID HV114
11	160	HID HV116
11	200	HID HV120
11	240	HID HV124
13	140	HID HN314
13	160	HID HN316
15	140	HID HN514
15	160	HID HN516
17	140	HID HN714
17	160	HID HN716

INTEGRA HAP stem lock

Size	Length (mm)	Ref.
13	200	HID HV320
13	240	HID HV324
15	200	HID HV520
15	240	HID HV524
17	200	HID HV720
17	240	HID HV724

INTEGRA CEM stem

Size	Length (mm)	Ref.
11	160	HID CV116
13	160	HID CV316
13	200	HID CV320

Wedge Ø5,5 mm

Length (mm)	Ref.
28	HIV 55028
30	HIV 55030
32	HIV 55032
34	HIV 55034
36	HIV 55036
38	HIV 55038
40	HIV 55040
45	HIV 55045
50	HIV 55050

INTEGRA meta block HAP

Height	Ref.
30	HIM HD030
40	HIM HD040
60	HIM HD060
80*	HIM HD080
100*	HIM HD100
120*	HIM HD120

Alumina head 12/14

Dimension	Diameter	Ref.
Short neck (-3,5)	28	HAT CC428
Standard neck (0)	28	HAT CM428
Long neck (+3,5)	28	HAT CL428
Short neck (-4)	32	HAT CC432
Standard neck (0)	32	HAT CM432
Long neck (+4)	32	HAT CL432
Short neck (-4)*	36	HAT CC436
Standard neck (0)*	36	HAT CM436
Long neck (+4)*	36	HAT CL436

Metal head 12/14

Dimension	Diameter	Ref.
Standard neck (0)	22,2	HIT CM422
Long neck (+3)	22,2	HIT CL422
Short neck (-3,5)	28	HIT CC428
Standard neck (0)	28	HIT CM428
Long neck (+3,5)	28	HIT CL428
X-Long neck (+7)	28	HIT CX428

INTEGRA plate

Ref.
HIP VT250

Range of INTEGRA revision cups

INTEGRA HAP REV cup

Size	Ref.
50	HIC AP050
54	HIC AP054
58	HIC AP058
62	HIC AP062

INTEGRA HAP cup

Size	Ref.
50	HIC AV050
54	HIC AV054
58	HIC AV058
62	HIC AV062

INTEGRA Insert

Size	Ref.
50	HII DA050
54	HII DA054
58	HII DA058
62	HII DA062

Dual-mobility liner

Correspondence INTEGRA cup	Size Quattro	Diameter	Ref.
50	42	22,2	HIN DA250
54	46	22,2	HQN DP246
58	50	28	HQN DM850
62	54	28	HQN DM854

Cancellous screw Ø9,5 mm

Length	Ref.
20	HIV 95020
25	HIV 95025
30	HIV 95030
35	HIV 95035
40	HIV 95040
45	HIV 95045
50	HIV 95050
55	HIV 95055
60	HIV 95060

*On special request

INTEGRA revision stems

INTEGRA trial stem

Size	Length (mm)	Ref.
11	140	HIA DE114
11	160	HIA DE116
11	200	HIA DE120
11	240	HIA DE124
13	140	HIA DE314
13	160	HIA DE316
13	200	HIA DE320
13	240	HIA DE324
15	140	HIA DE514
15	160	HIA DE516
15	200	HIA DE520
15	240	HIA DE524
17	140	HIA DE714
17	160	HIA DE716
17	200	HIA DE720
17	240	HIA DE724

INTEGRA trial meta **block**

Height	Ref.
30	HIA BE030
40	HIA BE040
60	HIA BE060
80*	HIA BE080
100*	HIA BE100
120*	HIA BE120

Trial meta block **srew**

Ref.
HIAVB030

INTEGRA stem **impactor**

Ref.
HIAIT001

Hexagonal **screwdriver** 4,5

Ref.
HL1609-004

Head impaction **end**

Ref.
HTA TA040

Head impaction **tip**

Ref.
HMA TA008

Block impaction **end**

Ref.
HIA GS009

Extraction **hook** ∅ 6

Ref.
HIA GS005

Locking screw **gauge**

Ref.
HIA GV004

Drill ∅ 5,5

Ref.
HIA MV055

Guiding **sleeve** + insert

Ref.
HIA GV002

INTEGRA block/stem **separator**

Ref.
HIAAM001

Flexible **reamer**

Diameter	Ref.
11	HL1300-021
12	HL1300-022
13	HL1300-023
14	HL1300-024
15	HL1300-025
16	HL1300-026
17	HL1300-027
18	HL1300-028

INTEGRA **visor**

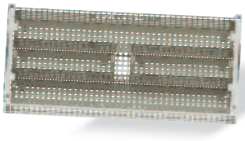
Ref.
HIAVV004

Trial **head** 12/14

Size	Diameter	Ref.
Standard neck (0)	22,2	HTA CM422
Long neck (+3)	22,2	HTA CL422
Short neck (-3,5)	28	HTA CC428
Standard neck (0)	28	HTA CM428
Long neck (+3,5)	28	HTA CL428
X-Long neck (+7)	28	HTA CX428
Short neck (-4)	32	HTA CC432
Standard neck (0)	32	HTA CM432
Long neck (+4)	32	HTA CL432
Short neck (-4)*	36	HTA CC436
Standard neck (0)*	36	HTA CM436
Long neck (+4)*	36	HTA CL436

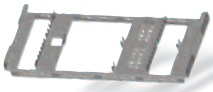
Stem guide for flexible reamer

Ref.
HL1300-031



Instrument **rack** INTEGRA

	Ref.
Universal rack H78	UCAPA001
492/68/H56 + 10 bowl	UCAEC003
230/68/H56 + 10 bowl	UCAEC004
474/138/H56 + 10 bowl	UCAEC005
2 handles rack top	GNANW180



Flexible reamer **rack**

Ref.
HMA PP02

*On special request

INTEGRA cup with screws and peg

INTEGRA trial REV **cup**

Size	Ref.
50	HIA CE050
54	HIA CE054
58	HIA CE058
62	HIA CE062

INTEGRA insert **impactor**

Size	Ref.
50	HIA CX050
54	HIA CX054
58	HIA CX058
62	HIA CX062

Dual-mob trial **liner**

Size	Diameter	Ref.
42	22,2	HQA VN242
46	22,2	HQA VN246
50	28	HQA VN850
54	28	HQA VN854

Big drill **guide** ∅ 3,2

Ref.
HIA CX002

Stem **guide**

Ref.
HIA CX003

Graft **obturator**

Ref.
HIA CX004

Bayonnet **drill** ∅ 3,2 L56

Ref.
HL3010-000-17

Liner **impactor**

Ref.
HQA VI011

M10 orientable **impactor**

Ref.
HL1300-005

Remov **orientation** device ∅ 26

Ref.
HCAOA026

Hexagonal **screwdriver** 3,5 L 350

Ref.
HL3010-100-25

Cardan **screwdriver** hex 3,5

Ref.
HL1300-010

Impactor end*

Ref.
HQA VI013

Bayonnet flexible **shaft**

Ref.
HL3010-000-15

Gauge

Ref.
HL3010-200-07

Square **tip**

Ref.
HIA CX006

Palpation **hook**

Ref.
HIA CX005

M10 trial **cup**

Diameter	Ref.
50	HL3010-150
54	HL3010-154
58	HL3010-158
62	HL3010-162

M10 head **impaction** tip

Ref.
HMA TA008

M10 **impaction** end

Ref.
HMA TA009

INTEGRA cup display **rack**

Ref.
HIA CX001

Standard **rack** H80

Ref.
UCA PV080

Range of MBA femoral stems

MBA HAP stem, neck 12/14

Size	Side	Ref.
1 (monobloc)	right	HMT HD141
2	right	HL1300-00-102
3	right	HL1300-00-103
4	right	HL1300-00-104
5	right	HL1300-00-105
6	right	HL1300-00-106
7	right	HL1300-00-107
1 (monobloc)	left	HMT HG141
2	left	HL1300-01-102
3	left	HL1300-01-103
4	left	HL1300-01-104
5	left	HL1300-01-105
6	left	HL1300-01-106
7	left	HL1300-01-107

MBA CEM stem, neck 12/14

Size	Side	Ref.
2	right	HL1300-00-002
3	right	HL1300-00-003
4	right	HL1300-00-004
5	right	HL1300-00-005
2	left	HL1300-01-002
3	left	HL1300-01-003
4	left	HL1300-01-004
5	left	HL1300-01-005

MBA mod neck straight 12/14

Size	Ref.
unique	HMB DR141

MBA mod neck oblique 12/14

Size	Ref.
unique	HMB IN001

Metal head 12/14

Dimension	Diameter	Ref.
Standard neck (0)	22,2	HIT CM422
Long neck (+3)	22,2	HIT CL422
Short neck (-3,5)	28	HIT CC428
Standard neck (0)	28	HIT CM428
Long neck (+3,5)	28	HIT CL428
X-Long neck (+7)	28	HIT CX428

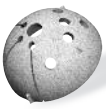
Alumina head 12/14

Dimension	Diameter	Ref.
Short neck (-3,5)	28	HAT CC428
Standard neck (0)	28	HAT CM428
Long neck (+3,5)	28	HAT CL428
Short neck (-4)	32	HAT CC432
Standard neck (0)	32	HAT CM432
Long neck (+4)	32	HAT CL432

Alumina head Biolox Delta 12/14*

Dimension	Diameter	Ref.
Short neck (-4)	36	HAT CC436
Standard neck (0)	36	HAT CM436
Long neck (+4)	36	HAT CL436

MBA acetabular cup



MBA HAP cup

Size	Ref.
46	HL4200-046
48	HL4200-048
50	HL4200-050
52	HL4200-052
54	HL4200-054
56	HL4200-056
58	HL4200-058
60	HL4200-060
62	HL4200-062

U PE cover insert

Size	Diameter	Ref.
46	22,2	HL4200-22-046
48	22,2	HL4200-22-048
46	28	HL4200-28-046
48	28	HL4200-28-048
50	28	HL4200-28-050
52	28	HL4200-28-052
54	28	HL4200-28-054
56	28	HL4200-28-056
58	28	HL4200-28-058
60	28	HL4200-28-060
62	28	HL4200-28-062

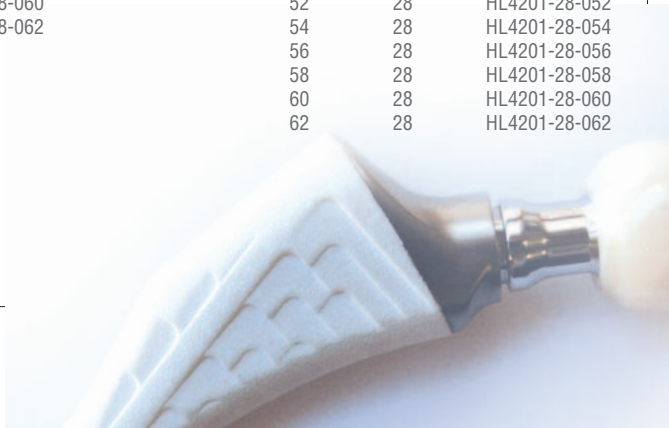
U PE constr insert*

Size	Diameter	Ref.
48	22,2	HL4201-22-048
50	22,2	HL4201-22-050
52	22,2	HL4201-22-052
54	22,2	HL4201-22-054
56	22,2	HL4201-22-056
58	22,2	HL4201-22-058
60	22,2	HL4201-22-060
62	22,2	HL4201-22-062
50	28	HL4201-28-050
52	28	HL4201-28-052
54	28	HL4201-28-054
56	28	HL4201-28-056
58	28	HL4201-28-058
60	28	HL4201-28-060
62	28	HL4201-28-062

Cancellous screw Ø 5,5 mm

Length	Ref.
20	HUV 55020
25	HUV 55025
30	HUV 55030
35	HUV 55035
40	HUV 55040
45	HUV 55045

*On special request



MBA stem

MBA stem **inserter**

Ref.
HL1300-001

Double taper/neck removal tool

Ref.
HL1300-004

Hexagonal **screwdriver** 3,5 L240

Ref.
HL1300-007

M10 head **impaction** tip

Ref.
HMA TA008

Impactor M10

Ref.
HTA TA040

MBA stem **extractor**

Ref.
HMA TA001

MBA 12/14 trial **mod neck**

Ref.
HMA BE141

MBA 12/14 trial **mod neck oblique**

Ref.
HMA BE001

MBA **rasp**

Size	Side	Ref.
2	right	HL1300-100-02
3	right	HL1300-100-03
4	right	HL1300-100-04
5	right	HL1300-100-05
6	right	HL1300-100-06
7	right	HL1300-100-07
2	left	HL1300-101-02
3	left	HL1300-101-03
4	left	HL1300-101-04
5	left	HL1300-101-05
6	left	HL1300-101-06
7	left	HL1300-101-07

MBA right **rasp holder**

Ref.
HMA TA003

MBA left **rasp holder**

Ref.
HMA TA004

Trial **head** 12/14

Size	Diameter	Ref.
Standard neck (0)	22,2	HTA CM422
Long neck (+3)	22,2	HTA CL422
Short neck (-3,5)	28	HTA CC428
Standard neck (0)	28	HTA CM428
Long neck (+3,5)	28	HTA CL428
X-Long neck (+7)	28	HTA CX428
Short neck (-4)	32	HTA CC432
Standard neck (0)	32	HTA CM432
Long neck (+4)	32	HTA CL432
Short neck (-4)*	36	HTA CC436
Standard neck (0)*	36	HTA CM436
Long neck (+4)*	36	HTA CL436

Punch **chisel**

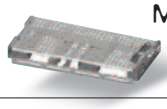
Ref.
HL1300-456

MBA **rasp trial** neck 12/14

Ref.
HMA CR141

Rack bowl

Ref.
UCA EC001



MBA stem **rack**

Ref.
HMA CA003

Cup reamer

Cup **reamer**

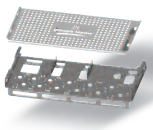
Diameter	Ref.
42	HL3010-242
44	HL3010-244
46	HL3010-246
48	HL3010-248
50	HL3010-250
52	HL3010-252
54	HL3010-254
56	HL3010-256
58	HL3010-258
60	HL3010-260
62	HL3010-262

Cup **reamer holder**

Diameter	Ref.
42	HL3010-342
44	HL3010-344
46	HL3010-346
48	HL3010-348
50	HL3010-350
52	HL3010-352
54	HL3010-354
56	HL3010-356
58	HL3010-358
60	HL3010-360
62	HL3010-362

Cup **reamer axis**

Ref.
HL3010-200-20



Cup **reamers rack**

Ref.
HUA FC002

MBA cup

Orientable **Impactor** M10

Ref.
HL1300-005

Remov **orientation** device ∅ 26

Ref.
HCAOA026

Acetab **gripper** ∅ 22,2

Ref.
HCPPA022

Acetab **gripper** ∅ 28

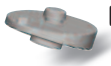
Ref.
HCPPA028

Constr acetab **gripper** ∅ 22,2

Ref.
HCPPA122

Impaction end flat M10

Ref.
HL1300-005-04



Impaction end cover M10

Ref.
HL1300-005-03

Drill **guide** ∅ 3,2

Ref.
HL1300-013

M10 trial **cup**

Diameter	Ref.
46	HL3010-146
48	HL3010-148
50	HL3010-150
52	HL3010-152
54	HL3010-154
56	HL3010-156
58	HL3010-158
60	HL3010-160
62	HL3010-162

Gauge

Ref.
HL3010-200-07

Cardan **screwdriver** hex 3,5

Ref.
HL1300-010

Bayonet **flexible shaft**

Ref.
HL3010-000-15

Bayonet **drill** ∅ 3,2 L56

Ref.
HL3010-000-17

Releasing **key**

Diameter	Ref.
22,2	HCA CD022
28	HCA CD028

Cementless acetabular **rack**

Ref.
HCA PA001